

60,298-512; ST 267

IN THE SPECIFICATION

[18] A second valve 44 includes a piston 46 that sees discharge pressure on the left hand side from a discharge pressure chamber 47. A suction pressure tap 49 and an intermediate pressure tap 51 deliver refrigerant pressure into a chamber to the right hand side of the piston 46. This pressure fluid along with the spring force 52 tends to hold the piston 46 at the illustrated position against a piston stop 60. In Figure 2, both the valves 29 and 44[[40]] are shown in the open position such that refrigerant can flow from the dump 26, into lines 42, 51, 49 and 38 back to suction 36. Thus, with the valves 29 and 44 in the position illustrated in Figure 2, low capacity operation is achieved. As can be appreciated from Figure 2, the refrigerant tap through line 42 is simply the refrigerant to be dumped under low capacity operation. Figure 3A shows this same low capacity operation. This is a condition wherein the suction pressure is above a particular amount and the pressure differential is below a particular amount. This is zone 1 of Figure 4. Under these conditions, low capacity operation is desirable.

[19] As shown in Figure 3A[[3B]], the pressure differential is now increased such that the discharge pressure to the left side of the piston 46 has overcome the force on the right side of the piston 46. Under these conditions, the piston 46 blocks the tap 49 and refrigerant is no longer bypassed. Thus, high capacity operation occurs. As shown in Figure 3B, the suction pressure is also low such that the valve body 40 has moved to the right blocking line 42. For this separate reason, high capacity operation will occur. As shown in Figure 4, this would be zone 2.